

AMENDMENTS TO THE CLAIMS

1-4. (Cancelled)

5. (Currently Amended) A transgenic rat whose genome comprises both a normal CHRNA4 gene and a transgene encoding mutant CHRNA4 having, wherein the transgene encodes the amino acid sequence of SEQ ID NO:3 in which the 286th Ser is substituted by Leu and is operably linked to a PDGF-β chain promoter and expressed in the brain cortex and hippocampus of the transgenic rat, and wherein the transgenic rat is established by a normal ontogenesis and develops a spontaneous epileptic seizure during sleep.

6. (New) The transgenic rat of claim 5, wherein the mutant transgene CHRNA4 has the nucleotide sequence of SEQ ID NO:2 in which the 865th t is substituted by c, and the 866th c is substituted by t.